FY2006

FORT MONROE
Virginia

INSTALLATION ACTION PLAN

Printed July 2005

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Installation Restoration Program for an installation. The plan will identify environmental cleanup requirements at each site or area of concern and propose a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations and necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, USAEC, installations, executing agencies, regulatory agencies, and the public, an IAP has been completed for Fort Monroe. The IAP is used to track requirements, schedules and budgets for all major Army installation restoration programs.

All site specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following persons contributed to the formulation and completion of this Installation Action Plan:

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Fort Monroe
FY06 Installation Action Plan

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Table of Contents

Acronyms & Abbreviations

AEDB-R	Army Environmental Data Base-Restoration
AST	Aboveground Storage Tank
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CTC	Cost-to-Complete
CTT	Closed, Transferred or Transferring
CC	Compliance-related Cleanup
cy	cubic yards
DA	Department of Army
DD	Decision Document
DoD	Department of Defense
DMM	Discarded Military Munitions
EOD	Explosive Ordnance Disposal
ER,A	Environmental Restoration, Army (formerly DERA)
FS	Feasibility Study
ft	foot
FTMON	Fort Monroe
FY	Fiscal Year
HRR	Historical Records Review
IAP	Installation Action Plan
IAW	In Accordance With
IC	Institutional Controls
IRP	Installation Restoration Program
K	$1,000
LTM	Long-term Management
MC	Munitions Constituents
MEC	Munitions and Explosives of Concern
MMRP	Military Munitions Response Program
NPL	National Priorities List
PA	Preliminary Assessment
PAO	Public Affairs Office
POM	Program Objective Memorandum (budget)
PY	prior year
RA	Remedial Action
RA(C)	Remedial Action (Construction)
RA(O)	Remedial Action (Operation)
RAB	Restoration Advisory Board
RAC	Risk Assessment Code
RACER	Remedial Action and Cost Engineering Requirements
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision

SI	Site Inspection
TRADOC	Training and Doctrine Command
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine (formerly USAEHA)
USAEC	United States Army Environmental Center
USAEHA	United States Army Environmental Hygiene Agency (now USACHPPM)
USATHMA	United States Army Toxic and Hazardous Materials Agency (now USAEC)
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VDEQ	Virginia Department Environmental Quality
VOC	Volatile Organic Compounds
WW1	World War 1

Installation Information

INSTALLATION LOCALE:

Fort Monroe is located at the southeastern tip of the Virginia lower peninsula between the Hampton Roads harbor to the southwest, the Chesapeake Bay to the east and Mill Creek to the west. The installation lies within the Hampton, Virginia corporate limits, south of the community of Phoebus and is accessible only by two bridges (Highways 143 and 258, respectively) that lead to the main gate. Fort Monroe's land connection, adjacent to the community of Chesapeake Heights, is fenced with no ready access.

INSTALLATION MISSION:

Provide quality base operations support to National Defense Agencies through facilities, infrastructure, well-being, force protection and other services.

COMMAND ORGANIZATION:

Headquarters: Installation Management Agency, Northeast Region
Garrison: Headquarters Fort Monroe
Directorate: Public Works and Logistics, Environmental Division

REGULATOR PARTICIPATION:

Federal: Environmental Protection Agency, Region III
State: Virginia Department of Environmental Quality (VDEQ)

NPL STATUS: Non-NPL

COMMUNITY INVOLVEMENT STATUS: none related to CC, IRP or MMRP.

PROGRAM SUMMARIES:

MMRP

Contaminants of Concern: Metals, UXO
Media of Concern: Soil and Sediment
Estimated date for RIP/RC: 2017
Funding to Date: $25K
CTC: $191,989K

IRP

Fort Monroe at one time had four restoration sites, all of which are listed as response complete in AEDB-R. (See list on page 8)

CC

Fort Monroe has reported 20 pollution incidents to the VDEQ since 1990. Regulatory closure has been granted in every instance. Limited remediation in the form of soil and or liquid hydrocarbons removal was conducted at 12 sites. More complex remediation, i.e. groundwater pumping, soil vapor extraction, air sparging, etc., has not been undertaken at any location on site.

Cleanup Program Summary

HISTORIC ACTIVITY: Environmental cleanup activities at Fort Monroe have primarily dealt with petroleum hydrocarbons caused by releases from storage tanks. The current underground storage tank (UST) and above ground storage tank (AST) database shows a total of 227 tanks; 194 of the tanks have been either closed in place or removed. Remediation, in the form of soil and/or liquid hydrocarbons removal, has been undertaken at several sites. In a few instances, the VDEQ has requested site characterization (contaminant plume definition, soil and groundwater sampling, evaluation of risk to sensitive receptors, etc.) and/or long-term groundwater monitoring; however, all pollution incidents reported to the VDEQ have been granted regulatory closure.

IRP:

Fort Monroe has four closed sites listed as part of the IRP. These sites are listed and described on the following page. Monitoring wells were installed at Sites 01 and 02; however, no records of well bore logs have been found. One round of sampling in 1992 for priority pollutants did not reveal contamination in the groundwater; the groundwater table throughout most of the installation is approximately 4-5 feet below ground surface. The wells have not been properly maintained (i.e., no well caps, objects lodged in the wells), so they were permanently closed in 1998 as their integrity was questionable. No records of sampling can be found for Sites 03; the classified document incinerator was demolished in 1992. No documentation can be found indicating if VDEQ supports closure of sites 01-03 with no further action required. While several studies have been undertaken in an attempt to identify locations of unexploded ordnance in the subsurface, only one project of significance has been undertaken to remediate it. In 1978, the top two feet of sediment in the moat were screened and the ordnance-related items removed. Typically, ordnance items are removed and properly disposed when discovered during construction projects. Site 04 was closed out of the IRP in 1995 and will be addressed under the MMRP.

MMRP:

To date there have been no specific cleanup actions undertaken as part of the MMRP. Recent completion of the CTT Range/Site Inventory creates a starting point from which a comprehensive and systematic approach to munitions identification and remediation can begin. Efforts related to addressing military munitions are discussed in detail in the following Section.

CURRENT ACTIVITY: There is currently no activity with regards to CC or IRP sites. Site-specific actions and regulatory participation occur in response to the identification of contamination. Several USTs and ASTs that are no longer in use at Fort Monroe and Big Bethel Reservoir will need to be removed, but it is unknown at this time whether any of those sites will require remediation.

PROGRAM PROGRESS: Since 1990 there have been 20 incidents reported to the VDEQ. The majority of these have been petroleum releases from USTs or ASTs or petroleum products identified in the subsurface during construction activities. All have been granted regulatory closure by the VDEQ. There are no current Administrative Orders, Consent Orders, Notices of Violation and/or Corrective Actions Plans.

AEDB-R RESPONSE COMPLETE IRP SITES

AEDB-R #	SITE TITLE	RC DATE
Site 01	DOG BEACH LANDFILL	199208
Site 02	200 AREA LANDFILL	199208
Site 03	CLASSIFIED DOCUMENT INCINERATOR	199210
Site 04	UXO, INSTALLATION-WIDE	199501

Site 01, DOG BEACH LANDFILL (Closed)

This area, located on the northern part of the installation, was operated from the mid 1930s to the mid 1950s for disposal of construction and demolition debris, trash and solid waste. No toxics were reportedly disposed; there was no liner. USATHMA sampled the area in 1978; results showed no trace of contamination by munitions. Three monitoring wells, approximately 12 feet deep, were sampled once in 1992 for priority pollutants; no contaminates were present. The wells were permanently closed in 1998 IAW Virginia Department of Health, Private Well Regulations. The SI is completed, and no cleanup is recommended.

Site 02, 200 AREA LANDFILL (Closed)

This area, located in the vicinity of the current Post Exchange (Bldg 210), was operated from 1819 (?) to the mid 1930s for disposal of construction and demolition debris, trash and solid waste. There is also the potential for pathological wastes; there is no liner. USATHMA sampled the area in 1978; results showed no trace of contamination by munitions. Four monitoring wells, approximately 12 feet deep, were sampled once in 1992 for priority pollutants; no contaminates were present. The wells were permanently closed in 1998 IAW Virginia Department of Health, Private Well Regulations. The SI is completed, and no cleanup is recommended.

Site 03, CLASSIFIED DOCUMENT INCINERATOR (Closed)

This area, located in the current TRADOC command area, consisted of two, multi-chamber incinerators used to incinerate documents only under Virginia Air Pollution Control Registration No. 60336. Approximately 90 pounds of non-toxic ash was generated weekly and transported off site to a sanitary landfill. The incinerator reportedly closed in early FY93. The SI is completed; no cleanup is required.

Site 04, UXO, INSTALLATION-WIDE (Closed)

Conventional ordnance and explosive wastes dating back to the 1840s have been identified in the subsurface at Fort Monroe. Efforts directed specifically at ordnance cleanup/removal have been limited in frequency and scope. Removal of ordnance and other explosive waste from the upper two feet of sediment in the moat was undertaken in 1978. Explosive Ordnance Disposal (EOD) personnel removed several tons of metal, including 182 canon balls; 25,000 rounds of small arms ammunition; over 2,000 fuses; 10, 3-inch rounds fused with picric acid; 21, 50-caliber rounds; and other miscellaneous items. Other ordnance-related items are identified, removed and disposed when they are encountered during construction projects. Discoveries of UXO have been documented since the late 1950s, though the documentation is by no means complete. However, known finds have occurred in every part of the installation with some concentration in the moat, the former arsenal storage yard and in the areas pf the batteries and old experimental ranges. A summary of munitions finds is included in the following table.

AEDB-R RESPONSE COMPLETE IRP SITES (CONT.)

Site 04, UXO, INSTALLATION-WIDE (Closed) (cont.)

MUNITIONS FOUND AT FORT MONROE

Date	Location	Description of items
Late 1950s	Old 500 area – across from the Officer's Club	Thousands of rounds of live, small arms ammunition, WWII vintage.
May 1964	Between tank 189 and the moat	17 or 18, 12-inch mortar shells filled with black powder.
1965 or 1966	Behind Building 37, near Building 133	129, 4-inch and 8-inch cannon balls (removed).
August 1971	Behind Building 14, 10 feet down	A number of 4-inch and 8-inch cannon balls.
1975	In front of Building 83	1, 12-inch mortar shell (live).
March 1976	Parade Ground	20 to 25, 4-inch cannonballs.
January-June 1977	346C Fenwick Road	Cannon ball.
	Battery Church	Cannon ball.
	Building 206	Cannon ball.
	Building 88	Cannon ball.
March 1977	Building 88	1, 10-inch Columbia mortar shell, wood fuse (live)
Late 1970s	All around Building 134	Several cases of 4-inch artillery shells (live).
	Behind Battery Church	1, 4-inch and 1, 8-inch shell (live).
	Behind Building 186	1, 12-inch mortar shell (live).
December 1979	Fenwick Road behind the Officer's Club	1, 4-inch mortar for 6-pounder cannon.
Early 1980s	NW corner of Building 27	1, 20-inch mortar shell (live).
	Dog Beach	1, 4-inch shell (live).
	Near Battery Church	1, 12-inch mortar shell (live).
June 1985	In front of Building 201	Several 4-inch shells (live).
19 May 1980	Behind Battery DeRussy	1, 6-inch cannon ball
August 1985	RV park	4 or 5, 4-inch cannon balls (live).
Fall 1985	NE corner of Building 134	21 Parrott shells (approximately 8-inch diameter) (live).
Summer 1987	Building 197	4 or 5 different shells (live).
March 1988	Near Water Tank	I, 12-inch mortar shell (live).
8 September 1992	N side of Building 49	4, 4-inch cannonballs
26 March 1991	Building 344	1, 12-inch mortar shell (live).
16 September 1992	Between Buildings 57 and 59	1, 30-pound Parrott round, 4-inch diameter.
9 January 1993	Building 245	3, 15-inch mortar shells
5-6 August 1993	Behind Building 39	~210 rounds, small arms ammunition
April 1998	Battery DeRussy	2, 10-inch shells stored inside the battery
2001	Building 171	1 cannon ball
29 January 2003	Between Buildings 203, 133, 134	5, various mortar shells, Civil War (4) and WWI vintage(1)

AEDB-R RESPONSE COMPLETE IRP SITES (CONT.)

Site 04, UXO, INSTALLATION-WIDE (Closed) (cont.)

A section of the 1993 BRAC Commission Report states:

> "The Commission recommends the Army comprehensively investigate the extent of unexploded ordnance to ensure public health and the environment are protected from current and future potential exposure to unexploded ordnance at Fort Monroe…
>
> The Commission requests the Secretary of Defense provide information on the status of this request to the 1995 Commission."

A post-wide survey for UXO, conducted in 1994 to fulfill that request, found 73,331 magnetic anomalies. Of these an estimated 21,851 anomalies have the potential to be ordnance. Based upon analysis of the geophysical surveys, it is estimated 1.8 percent of the magnetic anomalies will be UXO. Another 80,000 anomalies are suspected to be within the moat.

This site was closed in January 1995, and future actions will be addressed under the MMRP.

FORT MONROE

MILITARY MUNITIONS RESPONSE PROGRAM

MMRP Summary

STATUS: Non-NPL

AEDB-R SITES/SITES RC: 13/0

AEDB-R SITE TYPES:
11 Unexploded Munitions/Ordnance
2 Small Arms Ranges

CONTAMINANTS OF CONCERN: Metals, UXO

MEDIA OF CONCERN: Soil and Sediment

TOTAL MMRP FUNDING:

PRIOR YEAR:	$ 25K
CURRENT:	$ 0K
FUTURE:	$191,989K

DURATION OF MMRP:

Year of MMRP Inception:	2003
Year of RA Completion:	2017
Year of MMRP Completion:	2047

MMRP Contamination Assessment

Much of the area occupied by Fort Monroe has been developed or utilized at one time or another. Before and during the Civil War, one of the largest arsenals in the country was located here with a storage yard along the west side of what is now the main cantonment area. Seacoast gun batteries and their servicing magazines were placed along the east side of the installation to command the approaches to the Chesapeake Bay. After the war, experiments in the development of armor-piercing shells were conducted from a firing point at the extreme southeast point of the installation. Experimental shells were fired with reduced charges at targets set up at various locations north of that point. Other test ranges were also established. In the course of testing, many shells apparently failed to hit their mark and/or did not detonate.

Before the environmental and heath and safety issues associated with the practice were fully realized, the approved method for disposal of excess munitions was burial. Munitions were allegedly buried or sunk throughout the installation over a period of about seventy years although records are scanty to non-existent. Finds indicate munitions are widely scattered. For many years, routine excavations for construction have turned up quantities of UXO. Many of the items contain black powder and date to the nineteenth century, although some finds are of more recent vintage.

In 1980 USATHMA conducted soil, groundwater surface water and sediment sampling and testing to investigate for contamination associated with the production and use of munitions. No explosives-related contamination was identified. Open areas were surveyed with a magnetometer to search for buried metal objects, but subsurface conditions and the relatively unsophisticated technology of the time could not differentiate between miscellaneous metal objects and ordnance-related items.

The Phase 3 Army Range Inventory was completed at Fort Monroe in December 2003. The inventory identified 13 sites on Fort Monroe that are eligible for MMRP. The Phase 3 Inventory serves as the preliminary assessment under CERCLA. Site inspections (SIs) are scheduled to begin October 2005. Remedial investigations will begin in October 2010 as dictated by results of the SIs for the individual sites.

CLEANUP EXIT STRATEGY:

Historical Records Review (HRR)

HRRs are not typically performed separately for each site at an installation -- one HRR is typically performed per installation. Therefore, the cost for only one HRR cost was therefore estimated per installation.

Site Inspection (SI)

All of the available RACER elements of an SI were selected as defaults. The site-specific assumptions required included the identification of the media to be sampled and the number of samples to be collected. The primary purpose of the SI is to confirm the presence or absence of munitions constituents. As with the HRR, the Army typically funds and performs SIs for the installation as a whole. For installations with several or very large sites, it was determined that estimating an SI cost for each site produced a cost in excess of the Army's experience in performing these studies. For this reason, an SI cost was not estimated for all sites, but for a sufficient number of sites to reflect the expected cost of a facility-wide SI. At water sites, sediment was sampled instead of soil.

Remedial Investigation (RI)
All of the available RACER components of an RI were selected. The determination of the extent of contamination in all media is required in order to perform the risk assessment and evaluate remediation alternatives should they be required. It was therefore assumed sampling would be performed in groundwater and in surface and subsurface soils. The table presents the media sampling assumptions. If a small arms site was a water range, the only difference in RI estimating approach was that surface water and sediment samples were substituted for surface and subsurface soil samples and no groundwater sampling was conducted.

Feasibility Study (FS)
The FS for small arms ranges was estimated to have all the usual components included in the RACER model: scoping, development and screening of alternatives; analysis of alternatives; and remedy selection. Level of complexity was assumed to be moderate.

Remedial Design (RD)
RACER calculates RD cost as a percentage of RA Cost. The percentage method was selected for ex-situ technologies.

Remedial Action (RA)
The RA selected for small arms ranges was the excavation of lead-contaminated soil and transportation and disposal at an off-site facility with stabilization. This requires the use of two RACER technology models, one for excavation and a second for off-site transportation and disposal. The primary cost driver and most significant unknown for estimates with these technologies are the dimensions of the excavation and the associated volume of lead-contaminated soil. Soil excavation volumes were based on site size.

CTT Range and UXO-DMM-MC Sites
Fort Monroe, VA

MALCOLM PIRNIE

Figure E-1

Figure E-1

Area	Acres
A/I Range	0
Closed	72
Transferring	0
Transferred	68402

Legend

- Installation Boundary
- Roads
- Contours
- Counties
- Streams
- Water
- A/I Range Area
- Closed
- Transferring
- Transferred
- Non Range, Non UXO-DMM-MC Area

Projection	**UTM, zone 18**
Horizontal Datum	**NAD83**
Units	**Meters**
Grid	**2000 meters**

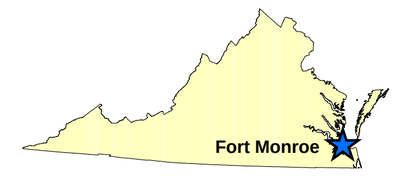
N
W E
S

1:60,000

1 0.5 0 1 2 3 Kilometers

1 0.5 0 1 2 Miles

Installation Location



CTT Range and UXO-DMM-MC Sites
Fort Monroe, VA

Source: Produced for the U.S. Army Corps of Engineers by Malcolm Pirnie, Inc. under contract DACA 31-00-D-0043.

Edition: Final Report

Date: December 2003

FORT MONROE

MILITARY MUNITIONS RESPONSE PROGRAM
SITE DESCRIPTIONS

FTMON-001-R-01
BATTERY ANDERSON/RUGGLES

SITE DESCRIPTION

Battery Anderson and Battery Ruggles were completed by the summer of 1899. Model 1890 M-l mortars were mounted on twelve Model 1896 and four Model 1891 carriages. The Model 1891 carriages were not satisfactory and were changed in the fall of 1901. The mortars had a range of between 2,210 yards and approximately 15,000 yards. These batteries were used for coastal artillery training and guarded the Chesapeake Bay. No information was located describing how often these batteries were used. The four mortar pits were divided into two batteries: Battery Anderson and Battery Ruggles. Battery Anderson consisted of the two southern pits and Battery Ruggles consisted of the two northern pits. These batteries were located in the northern portion of the installation along the shore of the Chesapeake Bay. The 12-inch mortars of Battery Anderson and Battery Ruggles were the first armament to be scrapped at Fort Monroe in 1942. The former Battery Anderson/Ruggles area is now used for storage. Recreational facilities and an airfield surround the area. The closed portion of Battery Anderson/Ruggles covers 9 acres (6 acres of Battery Anderson and 3 acres of Battery Ruggles) inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
SI	200507	200709
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-002-R-01
BATTERY BARBER, BOMFORD, AND EUSTIS

SITE DESCRIPTION

Battery Barber was completed in June 1898. One 8-inch rifle was mounted at Battery Barber. This battery was used for coastal artillery training and guarded the Chesapeake Bay. No information was located describing how often the battery was used. The battery was located outside the moat on the north point of the fort. Munitions use at Battery Barber ceased by 1943. The former Battery Barber area is now used for recreational purposes. Family housing, a bank, and the main exchange surround the area.

Battery Bomford was completed in 1897. Two 10-inch Model 1888 M-Il disappearing guns were mounted at the battery. Battery Bomford was located adjacent to Battery Barber outside the north point of the fort and was used for coastal defense. Munitions use at Battery Bomford ceased by 1943, and the emplacements of Battery Bomford were removed in March 1951. A bank and the main exchange now occupy the former Battery Bomford area. Family housing surrounds the area.

Battery Eustis was completed in 1901. Two 10-inch Model 1888 M-II disappearing guns were mounted at the battery. Battery Eustis was located outside the eastern side of the fort. The battery was located along the shore of the Chesapeake Bay for coastal defense. Munitions use at the battery ceased by 1943 and the battery was removed in March 1959 to provide room for a housing area. The former Battery Eustis area is now a family housing area. Recreational facilities and a child care center surround the area.

The closed portion of Battery Barber, Bomford, and Eustis covers 27 acres (3 acres of Battery Barber, 19 acres of Battery Bomford, and 5 acres of Battery Eustis) inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
SI	200507	200709
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-003-R-01
BATTERY CHURCH/MONTGOMERY

SITE DESCRIPTION

Battery Church was completed in 1901. Two 10-inch Model 1888 M-l disappearing guns were mounted at the battery.. No information was located describing how often this battery was used. Battery Church was located in the middle portion of installation along the shore of the Chesapeake Bay for coastal defense. Munitions use at Battery Church ceased by 1943. The former Battery Church area is undeveloped and family housing surrounds the area.

Battery Montgomery was completed in 1904. Two 6-inch Model 1900 rifles on barbette cartridges were mounted at the battery. The guns had a range of 13,077 yards. Battery Montgomery was located between Battery DeRussy and Battery Church along the shore of Chesapeake Bay for coastal defense. Munitions use ceased at the battery by 1943. The guns and carriages were removed in March 1948, and the battery itself was demolished in the early 1950s to make room for the Wherry family housing units. The former Battery Montgomery is now a family housing area. Recreational facilities and an airfield surround the area.

The closed portion of Battery Church/Montgomery covers 5 acres (3 acres of Battery Church and 2 acres of Battery Montgomery) inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
SI	200507	200709
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-004-R-01
BATTERY DERUSSY

SITE DESCRIPTION

Battery DeRussy was completed in 1901. Three 12-inch disappearing guns were mounted at the battery. These guns had a maximum range of 11,636 yards. Battery DeRussy was located in the middle portion of the installation along the shore of the Chesapeake Bay This battery was used for coastal artillery training and guarded the Chesapeake Bay. No information was located describing how often the battery was used.. Munitions use ceased at the battery by the middle of 1944. The former Battery DeRussy area is now used for storage. Recreational facilities and family housing surround the area. The closed portion of Battery DeRussy covers 5 acres inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
SI	200507	200709
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-005-R-01
BATTERY IRWIN/PARROTT

SITE DESCRIPTION

Battery Irwin was completed in 1902. Four 15-pounder rapid-fire guns were mounted at the battery.. No information was located describing how often this battery was used. Battery Irwin was located just outside the fort on the southern side along the shore of the Chesapeake Bay for coastal defense. Munitions use at the battery ceased by 1943. The former Battery Irwin area is now used for recreational purposes and family housing surrounds the area.

Battery Parrott was completed in 1906. Two 12-inch disappearing guns were mounted at the battery. Battery Parrott was located next to Battery Irwin just outside the southern side of the fort along the shore of Chesapeake Bay for coastal defense. Munitions use ceased at the battery early in 1943 and the armament was removed in November 1947. 90-mm guns were designated as the saluting battery in 1948, but these were removed in December 1950. The former Battery Parrott area is now used for storage and family housing surrounds the area.

The closed portion of Battery Irwin/Parrott covers 4 acres (1 acre of Battery Irwin and 3 acres of Battery Parrott) inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-006-R-01
BATTERY RANGE FANS-1

SITE DESCRIPTION

Portions of eleven battery fans cover waters of the Chesapeake Bay outside the installation boundary. The transferred portion of Battery Anderson encompasses 8,790 acres. The transferred portion of Battery Ruggles encompasses 534 acres. The transferred portion of Battery Barber encompasses 26,513 acres.The transferred portion of Battery Bomford encompasses 111 acres. The transferred portion of Battery Church encompasses 45 acres. The transferred portion of Battery DeRussy encompasses 7,079 acres.The transferred portion of Battery Eustis encompasses 21 acres. The transferred portion of Battery Irwin that covers the water portion of the battery fan encompasses 1,300 acres outside the installation boundary.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Sediment

PHASES	Start	End
PA	200306	200312
SI	200507	200709
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

The transferred portion of Battery Montgomery encompasses 6 acres. The transferred portion of Battery Parrott that covers the water portion of the battery fan encompasses 8,271 acres outside the installation boundary.

The Water Battery originally contained 42-pounder seacoast guns. The 10-inch Rodman gun that is displayed in front of Post Headquarters was once mounted at the Water Battery. 15-inch Rodman guns were also mounted at the battery. The construction of Battery Parrott necessitated the removal of the Water Battery in 1901. The transferred portion of the Water Battery that covers the water portion of the battery fan encompasses 3,244 acres outside the installation boundary. No documentation of UXO responses to these areas was identified.

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-007-R-01
BATTERY RANGE FANS-2

SITE DESCRIPTION

Portions of the battery fans of Battery Irwin, Battery Parrott, and the Water Battery cover land outside the installation boundary. The transferred portion of Battery Irwin that covers the land portion of the battery fan encompasses 650 acres outside the installation boundary, specifically the area of the City of Norfolk surrounding Willoughby Bay. The transferred portion of Battery Parrott that covers the land portion of the battery fan encompasses 11,815 acres outside the installation boundary, specifically a portion of the City of Norfolk and a portion of the City of Virginia Beach. The transferred portion of the Water Battery that covers the land portion of the battery fan encompasses 20 acres outside the installation boundary, specifically a small area on the northern shore of the City of Norfolk.

STATUS

RAC: High Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-008-R-01
BUILDING 139

SITE DESCRIPTION

Building 139 is located within the stone fort on the eastern side and is used for administrative purposes. It was built in 1909 and was originally used as barracks. Administration buildings and family housing surround the area. The Building 139 site covers 0.06 acre inside the installation boundary. On 3 July 1996 a UXO response incident occurred at Building 139, and sixteen potentially live Parrott shells were removed. The Parrott shells were discovered during excavation of an elevator foundation. The shells were located from two to three feet below the surface of the existing concrete slab and clustered near one of the porch support columns. Casemate Museum personnel confirmed the items were most probably Civil War era 30 to 40 pound Parrott rifle shells. All UXO was removed by EOD personnel from the immediate area of the elevator foundation that was being constructed. No further construction activity has occurred in this area to date.

STATUS

RAC: Serious Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-009-R-01
BUILDING 205

SITE DESCRIPTION

Building 205 is located on the southwestern corner of the installation and is currently used as a boat maintenance shop. It was built in 1910 and was originally used as a cable tank for laying underground mines. Administration buildings and the Chamberlin Hotel surround the area. The Building 205 site covers 0.02 acre inside the installation boundary. On 24 September 2003, several items were discovered in the water adjacent to the shoreline and next to the pier that extends seaward from Building 205 and the adjacent Building 204. These items were revealed as a result of severe erosion and damage to the pier incurred by Hurricane Isabel on 18 September 2003. The munitions identified by Navy EOD personnel are as follows: 11 Mk 52 Drill Mines, 2 Mk 55 Drill Mines, 3 Mk 40 inert Destructors, and an AN-M Series inert bomb. Technical data states there are no explosives in the mine cases. The items are partially covered with concrete and located at the low tide mark. Therefore, a recommendation was made by Langley EOD to have Fort Monroe contract with a specialized ordnance company for the removal of these items. As part of Hurricane Isabel recovery efforts, the 511th EN (Dive) Detachment at Fort Eustis, VA removed the visible ordnance as a part of a repair/replacement project of the pier in spring 2004. Navy EOD personnel identified and certified 11 pieces of ordnance as inert (3 MK-52s, 1 Mk55 and 7 Low Drag Bombs) on 22 April 2004. One piece of ordnance could not be determined to be inert and was removed from the site by EOD personnel. The inert ordnance was accepted at the local landfill. The type and amount of ordnance initially identified varies slightly from that recovered. It is unknown if more ordnance remains in the area beneath the sediments.

STATUS

RAC: Serious Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-010-R-01
MOAT

SITE DESCRIPTION

The construction of Fort Monroe began in 1818 with excavation of an 8-foot moat. The moat served as a buffer area around the fort. The outer wall is 20 feet high and 10 feet thick at its base. Administration buildings and family housing surround the area. The moat covers 19 acres inside the installation boundary. During a 1978 project to clear UXO out of the moat, Naval EOD personnel removed several tons of metal, including 182 cannon balls, 25,000 rounds of small-arms ammunition, 1,250 Mark Ill fuses, 10 3-inch rounds fused with picric acid, 800 Mark II fuses, 21 50-caliber shells and other miscellaneous items from the top two feet of the moat sediments. The undisturbed levels of the moat contain more UXO according to a test excavation made by the dive teams. One AEDB-R site (Site 04) encompassed potential UXO installation-wide to include the moat. Site 04 is listed as study completed with no cleanup required under the Installation Restoration Program. The description also states that UXO will be cleaned up as found throughout the installation.

STATUS

RAC: Serious Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Sediment

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

FTMON-011-R-01
TARGET RANGE

SITE DESCRIPTION

The Target Range consisted of a rifle, pistol and skeet range and was used from 1907 to 1965. The rifle and pistol ranges were used for training, and the skeet range was used for recreational purposes. The rifle range was a 300-yard known distance range with targets located on the closed portion of the range within the installation boundary. The Target Range was located on the northern end of the installation north of Battery Anderson/Ruggles. Today the former Target Range is undeveloped, and recreational facilities surround the area. The closed portion of the Target Range covers 3 acres inside the installation boundary. No documentation of UXO responses to the range was identified.

STATUS

RAC: Negligible Risk

CONTAMINANTS: Metals

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709

RC: 201709

CLEANUP

Army and DoD experience indicates that contamination on small arms ranges is primarily lead in soils. Remediation of these sites would primarily consist of excavation, off-site transportation, stabilization, and disposal. No MEC components would be expected at small arms ranges; therefore, they are not included in the estimate. Although the types of small arms ranges and patterns of contamination can vary, assumptions for this CTC estimate were based on the characteristics of a typical pistol and/or rifle MMRP range.

Typical dimensions and layout of an outdoor pistol and rifle range were obtained from MIL-HDBK-1027/3B (*Range Facilities and Miscellaneous Training Facilities other than Buildings*, June 1995) which provides recommended dimensions for range width, length, and impact berm design.

It was assumed sampling would be performed in groundwater and in surface and subsurface soils. The RA selected for small arms ranges was the excavation of lead-contaminated soil and transportation and disposal at an off-site facility with stabilization. Soil excavation volumes were based on site size.

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FTMON-012-R-01
TARGET RANGE-TD

SITE DESCRIPTION

The transferred portion of the Target Range encompasses 2 acres and covers the water portion of the range fan outside the installation boundary.

STATUS

RAC: Negligible Risk

CONTAMINANTS: Metals

MEDIA OF CONCERN: Sediment

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709

RC: 201709

CLEANUP

Army and DoD experience indicates that contamination on small arms ranges is primarily lead in soils and that remediation of these sites would primarily consist of excavation, off-site transportation, stabilization, and disposal. No MEC components would be expected at small arms ranges; therefore, they are not included in the estimate. Although the types of small arms ranges and patterns of contamination can vary, assumptions for this CTC estimate were based on the characteristics of a typical pistol and/or rifle MMRP range.

Typical dimensions and layout of an outdoor pistol and rifle range were obtained from MIL-HDBK-1027/3B (*Range Facilities and Miscellaneous Training Facilities other than Buildings,* June 1995*)* which provide recommended dimensions for range width, length, and impact berm design.

It was assumed sampling would be performed surface water and sediments. The RA selected for small arms ranges was the excavation of lead-contaminated sediments and transportation and disposal at an off-site facility with stabilization. Sediment excavation volumes were based on site size.

FTMON-013-R-01
WATER BATTERY

SITE DESCRIPTION

The Water Battery was completed by 1866. The battery originally contained 42-pounder seacoast guns. The 10-inch Rodman gun displayed in front of Post Headquarters today was once mounted at the Water Battery. Also mounted were 15-inch Rodman guns for coastal defense. No information was located describing how often this battery was used. The construction of Battery Parrott necessitated the removal of the Water Battery in 1901. The Water Battery was located in front of the East Gate of the fort. A small portion of the former Water Battery remains. Family housing and the moat surround the area. The closed portion of the Water Battery covers 1 acre inside the installation boundary. No documentation of UXO responses to the battery area was identified.

STATUS

RAC: Serious Risk

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200306	200312
RI/FS	201010	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP

A Multi-Use Site is a range or site where UXO or DMM is potentially present. A MEC removal action, in addition to remediation of MC, is potentially required.

To cost the cleanup of UXO and DMM at a site, we assumed that 35% of site's acreage would be subject to MEC removal to a 4-ft depth. MEC Institutional Controls (IC) consists of use land-use controls and public education programs. MEC Monitoring (LTM) frequency to determine the protectiveness of the MEC removal is six events over 30 years, or one event every five years. If needed, the MC 5 year review is also part of this review.

PAST MILESTONES

MMRP Start Date: 200306

PROJECTED MILESTONES

Phase Completion Milestones:

SI:	200709
RI:	201109
RD:	201609
RA(C):	201709
LTM	204709

ROD/DD Approval Dates: 2017

Construction Completion: 2017

Completion Date of all RA(C) Activities: 2017

Completion Date of MMRP (including LTM phase): 2047

Fort Monroe MMRP Schedule

(Based on current funding constraints)

CURRENT PHASE | FUTURE PHASE

AEDB-R #	SITE NAME	PHASE	FY06	FY07	FY08	FY09	FY10	FY11+
FTMON-001-R-01	Battery Anderson-Ruggles	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-002-R-01	Battery Barber, Bomford, and Eustis	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-003-R-01	Battery Church-Montgomery	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-004-R-01	Battery DeRussy	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-005-R-01	Battery Irwin and Parrott	RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-006-R-01	Battery Range Fans-1	SI						
		RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-007-R-01	Battery Range Fans-2	RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-008-R-01	Building 139	RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-009-R-01	Building 205	RIFS						
		RD						
		RA(C)						
		LTM						

Fort Monroe MMRP Schedule

(Based on current funding constraints)

CURRENT PHASE **FUTURE PHASE**

AEDB-R #	SITE NAME	PHASE	FY06	FY07	FY08	FY09	FY10	FY11+
FTMON-010-R-01	Moat	RIFS						
		RD						
		RA(C)						
		LTM						
FTMON-011-R-01	Target Range	RIFS						
		RD						
		RA(C)						
FTMON-012-R-01	Target Range-TD	RIFS						
		RD						
		RA(C)						
FTMON-013-R-01	Water Battery	RIFS						
		RD						
		RA(C)						
		LTM						

PRIOR YEAR FUNDING

FY02 PA/Phase 3 Range Inventory (all sites) $25K

CURRENT YEAR FUNDING

FY05: $0

FUTURE YEAR FUNDING

TOTAL FUTURE REQUIREMENTS: $191,989K

TOTAL MMRP PROGRAM COSTS: $191,994K

FORT MONROE
FY06 MMRP COST-TO-COMPLETE

AEDB-R#	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+	PHASE TOTAL	SITE TOTAL	ACTIVITY DESCRIPTION	Cost Est. Source	Supporting Documentation	Estimator & Date Prepared
FTMON-001-R-01	Battery Anderson-Ruggles	SI	75										75		Site Inspection (Surface Soil)	R	Range Inventory Report	Hess 03/05
		RIFS						486					486		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										9	9		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										267	267		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,245	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-002-R-01	Battery Barber, Bomford, and Eustis	SI	75										75		Site Inspection (Surface Soil)	R	Range Inventory Report	Hess 03/05
		RIFS						525					525		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										14	14		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										392	392		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,414	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-003-R-01	Battery Church-Montgomery	SI	75										75		Site Inspection (Surface Soil)	R	Range Inventory Report	Hess 03/05
		RIFS						451					451		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										8	8		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										233	233		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,175	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-004-R-01	Battery DeRussy	SI	75										75		Site Inspection (Surface Soil)	R	Range Inventory Report	Hess 03/05
		RIFS						451					451		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										8	8		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										233	233		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,175	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-005-R-01	Battery Irwin and Parrott	RIFS						451					451		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										8	8		Remedial Design (design percent`	R	Range Inventory Report	Hess 03/05
		RA(C)										233	233		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,100	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-006-R-01	Battery Range Fans-1	SI	96										96		MEC Archives Search Report	R	Range Inventory Report	Hess 03/05
		RIFS						2,671					2,671		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										3,391	3,391		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)									35,645	99,999	135,644		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	142,210	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-007-R-01	Battery Range Fans-2	RIFS						1,905					1,905		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										877	877		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										35,082	35,082		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	38,272	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-008-R-01	Building 139	RIFS						403					403		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										5	5		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										157	157		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05

FORT MONROE
FY06 MMRP COST-TO-COMPLETE

AEDB-R#	SITE TITLE	PHASE	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+	PHASE TOTAL	SITE TOTAL	ACTIVITY DESCRIPTION	Cost Est. Source	Supporting Documentation	Estimator & Date Prepared
		LTM										408	408	973	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-009-R-01	Building 205	RIFS						403					403		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										5	5		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										157	157		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	973	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-010-R-01	Moat	RIFS						451					451		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										15	15		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										423	423		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,297	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
FTMON-011-R-01	Target Range	RIFS						540					540		Remedial Investigation, Groundwater Monitoring Well (unconsolidated), and Feasibility Study	R	Range Inventory Report	Hess 03/05
		RD										4	4		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										105	105	649	Excavation (no sidewall protection) and Off-Site Transportation and Waste Disposal (Hazardous, Solids with Stabilization)	R	Range Inventory Report	Hess 03/05
FTMON-012-R-01	Target Range-TD	RIFS						357					357		Remedial Investigation and Feasibility Study	R	Range Inventory Report	Hess 03/05
		RD										4	4		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										105	105	466	Excavation (no sidewall protection) and Off-Site Transportation and Waste Disposal (Hazardous, Solids with Stabilization)	R	Range Inventory Report	Hess 03/05
FTMON-013-R-01	Water Battery	RIFS						411					411		MEC Site Characterization & Removal Assessment	R	Range Inventory Report	Hess 03/05
		RD										7	7		Remedial Design (design percent)	R	Range Inventory Report	Hess 03/05
		RA(C)										214	214		MEC Institutional Controls and MEC Removal Action	R	Range Inventory Report	Hess 03/05
		LTM										408	408	1,040	MEC Monitoring (6 events, 30 year duration)	R	Range Inventory Report	Hess 03/05
TOTALS IN THOUSANDS OF $			**396**	**0**	**0**	**0**	**0**	**9,505**	**0**	**0**	**35,645**	**146,443**	**191,989**	**191,989**				

Community Involvement

Fort Monroe has an extensive community relations program, handled through the installation Public Affairs Office (PAO). There is currently no interest or stakeholder group related to cleanup activities as there are no environmental remediation projects of note ongoing.

In the event a stakeholder group, such as a Restoration Advisory Board is warranted, any efforts to keep the public informed will be developed and implemented by the PAO.